

(19)



JAPANESE PATENT OFFICE

## PATENT ABSTRACTS OF JAPAN

(11) Publication number: **07207427 A**

(43) Date of publication of application: 08 . 08 . 95

(51) Int. Cl.

**C23C 14/02**  
**C23C 16/02**

(21) Application number: 06004112

(22) Date of filing: 19 . 01 . 94

(71) Applicant: **NISSIN ELECTRIC CO LTD**(72) Inventor:  
**IWAMOTO YASUSHI**  
**NISHIYAMA SATORU**  
**EBE AKINORI**  
**OGATA KIYOSHI**

## (54) FILM FORMING METHOD

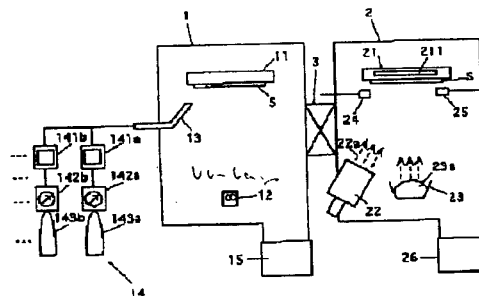
## (57) Abstract:

**PURPOSE:** To stably form a film with good quality on a substrate by blowing oxygen gas on the substrate surface under vacuum while irradiating the surface with UV rays to clean the surface and then forming a film while irradiating the substrate surface with inert gas ions.

**CONSTITUTION:** A substrate S made of glass or the like on which a film is to be formed is mounted on a holder 11 in a vacuum chamber 1 equipped with an evacuating device 15, and the chamber is evacuated. Then O<sub>2</sub> gas or a mixture gas of O<sub>2</sub> gas and inert gas such as He and Ar is blown through a nozzle 13 on the surface of the substrate S, while UV rays from a lamp 12 is made to irradiate the surface of the substrate S to decompose the polluted water and org. matters such as oil films on the surface of the substrate S into CO<sub>2</sub>, N<sub>2</sub>, H<sub>2</sub>O or the like and to vaporize and remove them. The cleaned substrate S is sent to the next vacuum chamber 2. In the chamber 2, the substrate is heated with a heater 211 under vacuum while irradiated with inert gas ions 22a from an ion source 22 so that the material 23a for vapor deposition in a vapor source 23 is heated and vaporized

to form a vapor deposition film without pin holes on the surface of the substrate S.

COPYRIGHT: (C)1995,JPO



Substrate S is made of glass or the like

UV - VUV rays

Heating of substrate S is done in the next vacuum chamber